HARDWARE INSTALLATION GUIDE

VDA110SMi   **1.3 Megapixel(720P) Vandal Dome IP Camera**
VDA110SMi-IR   **1.3 Megapixel(720P) Night Vision Vandal Dome IP Camera**
VDA110SM3i   **3.0 Megapixel(1080P) Vandal Dome IP Camera**
VDA110SM3i-IR   **3.0 Megapixel(1080P) Night Vision Vandal Dome IP Camera**
VDA110EHi   **Standard D1 Vandal Dome IP Camera**
VDA110EHi-IR   **Standard D1 Night Vision Vandal Dome IP Camera**
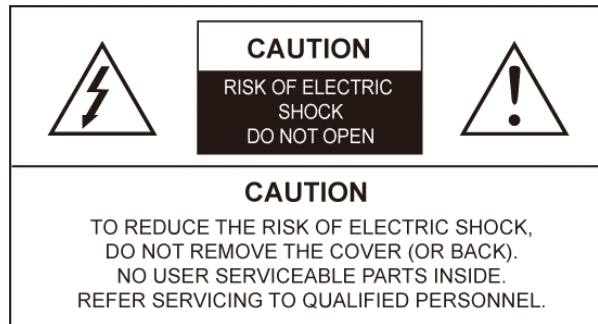

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VISION Vision Hitech Co., Ltd.

PRECAUTIONS

By selecting this product, you have decided to use a professional device that guarantees highest quality and reliability. We would like to thank you very much for your confidence and kindly ask you to read the following instructions carefully before installation and operation in order to take full advantage of all quality features regarding this product.

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│ ╱ ⚡╲       │     CAUTION      │       ╱ ! ╲      │
│╱────╲      │ RISK OF ELECTRIC │      ╱─────╲     │
│            │      SHOCK       │                  │
│            │   DO NOT OPEN    │                  │
│            └──────────────────┘                  │
│──────────────────────────────────────────────────│
│                    CAUTION                        │
│      TO REDUCE THE RISK OF ELECTRIC SHOCK,        │
│       DO NOT REMOVE THE COVER (OR BACK).          │
│        NO USER SERVICEABLE PARTS INSIDE.          │
│      REFER SERVICING TO QUALIFIED PERSONNEL.      │
└─────────────────────────────────────────────────┘
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The lighting flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of non-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at its own expense.

WARNING
Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION – To prevent electric shock and risk of the fire hazards
-Do NOT use power source other than that specified.
-Do NOT expose this appliance to rain or moisture.

Trademarks
All names used in this manual for hardware and software are probably registered trademarks of respective companies.

This installation should be made by a qualified service person and should conform to all local codes.

Table of content

Hardware Installation Guide

1. Precautions

- Please read the manual carefully before the installation in order to set up the camera correctly and to obtain the best picture quality.

- Please keep the manual in good condition for your future reference and service application.

- Installation and services should be only carried out by an authorized personnel according to local safety regulations.

- If any liquid or solid matter gets into the housing, immediately disconnect the camera from power supply and have it checked by your authorized dealer before reusing.

- Avoid installing the camera at extremely hot or cold places.

- If you are not a certified person, never try to dismantle the camera. To avoid electric shock, never remove the screws or covers. There are no parts inside that need maintenance by the user. All maintenance should be carried out by qualified personnel.

- Avoid installing the camera at a place of high humidity.

- Avoid installing the camera at the place exposed to gas or oil.

- Keep the top glass of the lens always clean in order to obtain the best picture quality all the time. Be careful not to be stained by fingerprint.

- Don't face the camera directly toward sunlight or sunlight reflecting area. CCD may go defective at this condition.

- Please give a special attention to keep the unit from dangerous drop or external shock during the process of transportation or handling.

- Never try to touch the camera in wet hand. It may cause an electric shock.

- Do not expose the camera to radioactivity. It causes a serious damage on the CCD.

2. Limitation of liability

This publication is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for any particular purpose, or non-infringement of the third party's right. This publication could include technical inaccuracies or typographical errors. Changes are added to the information herein, at any time, for the improvements of this publication and/or the corresponding product(s).

3. Disclaimer of warranty

In no event shall seller be liable to any party or any person, except for replacement or reasonable maintenance of the product, for the cases, including but not limited to below:
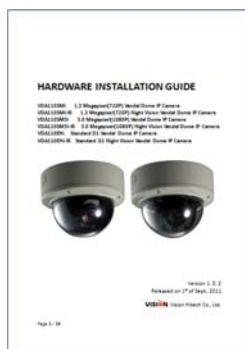
(1) Any damage and loss, including without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product;

(2) Personal injury or any damage caused by inappropriate use or negligent operation of the user;

(3) Unauthorized disassemble, repair or modification of the product by the user;

(4) Inconvenience or any loss arising when images are not displayed, due to any reason or cause including any failure or problem of the product;

(5) Any problem, consequential inconvenience, or loss or damage, arising out of the system combined by the devices of third party.

(6) Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the result of that surveillance-camera's picture, including saved data, for some reason, becomes public or is used for the purpose other than surveillance.

4. Package Contents
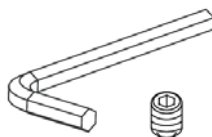

IP Camera

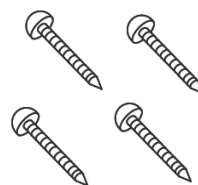Hardware Installation Guide

Fuse 1EA

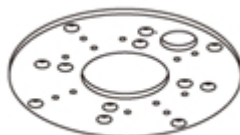

Sponge plate 1EA

L-Wrench 1.5mm & Socket Set Screw 1EA
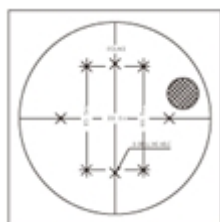

Mounting screws 4EA

Extra Video output 1EA

Adaptor plate 1EA

Tapping Screws 4EA

Star Wrench 1EA

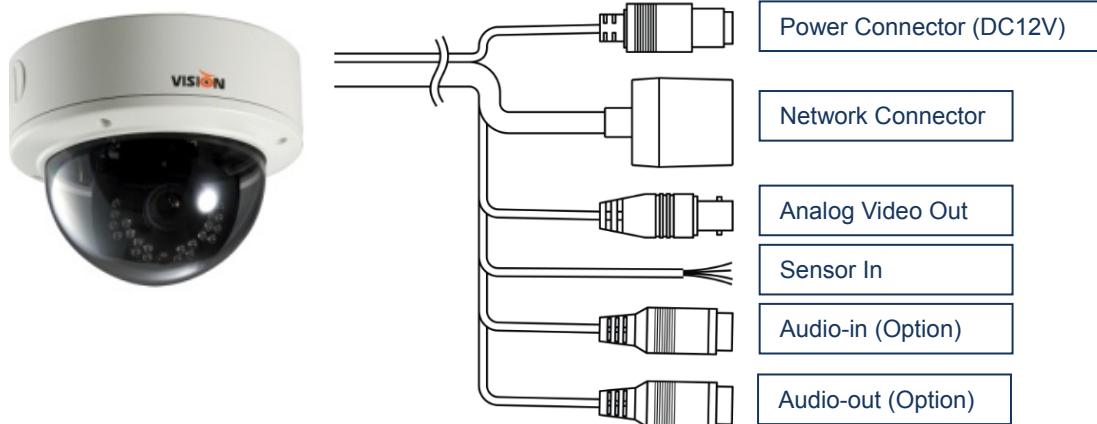

Sticker 1EA

Plastic anchor 4EA

CD
- Hardware Installation Guide (PDF)
- IP Camera Manual (PDF)
- NVR Pro Manual
- NVR Lite (16Ch) Program
- IPScan Utility Program (IP Installer)

Power Adaptor (Option)

5. Cable Connection

Power Connector (DC12V)

Network Connector

Analog Video Out

Sensor In

Audio-in (Option)

Audio-out (Option)

This IP camera uses 12VDC or IEEE802.3af PoE for power source. Please make sure to use a UL/CE approved and 12VDC regulated power supply or standard PoE injector, mid- or end-span for input power.

PoE (Power over Ethernet) Support

Power over Ethernet, or PoE, technology describes a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. This technology is useful for powering IP telephones, wireless LAN access points, network cameras, remote network switches, embedded computers, and other appliances where it would be inconvenient and expensive. (Main wiring must be done by qualified and/or licensed person)

AC Power

PoE Switch / Mid-Span / End-Span

Ethernet

Direct connection with standard LAN cable

The standard IEEE 802.3af describes two types of devices: Power Sourcing Equipment (PSE)and Powered Devices (PD). Power sourcing equipment provides power to the powered devices. The network camera represents the powered device, whereas a PoE Injector is a PSE device. The Pro

Series Network Camera models are IEEE 802.3af standard PoE compliant. They can be used with any IEEE 802.3af-compliant PoE injector, PoE switch, PoE mid-span and PoE end-span.

Various types of PoE equipments
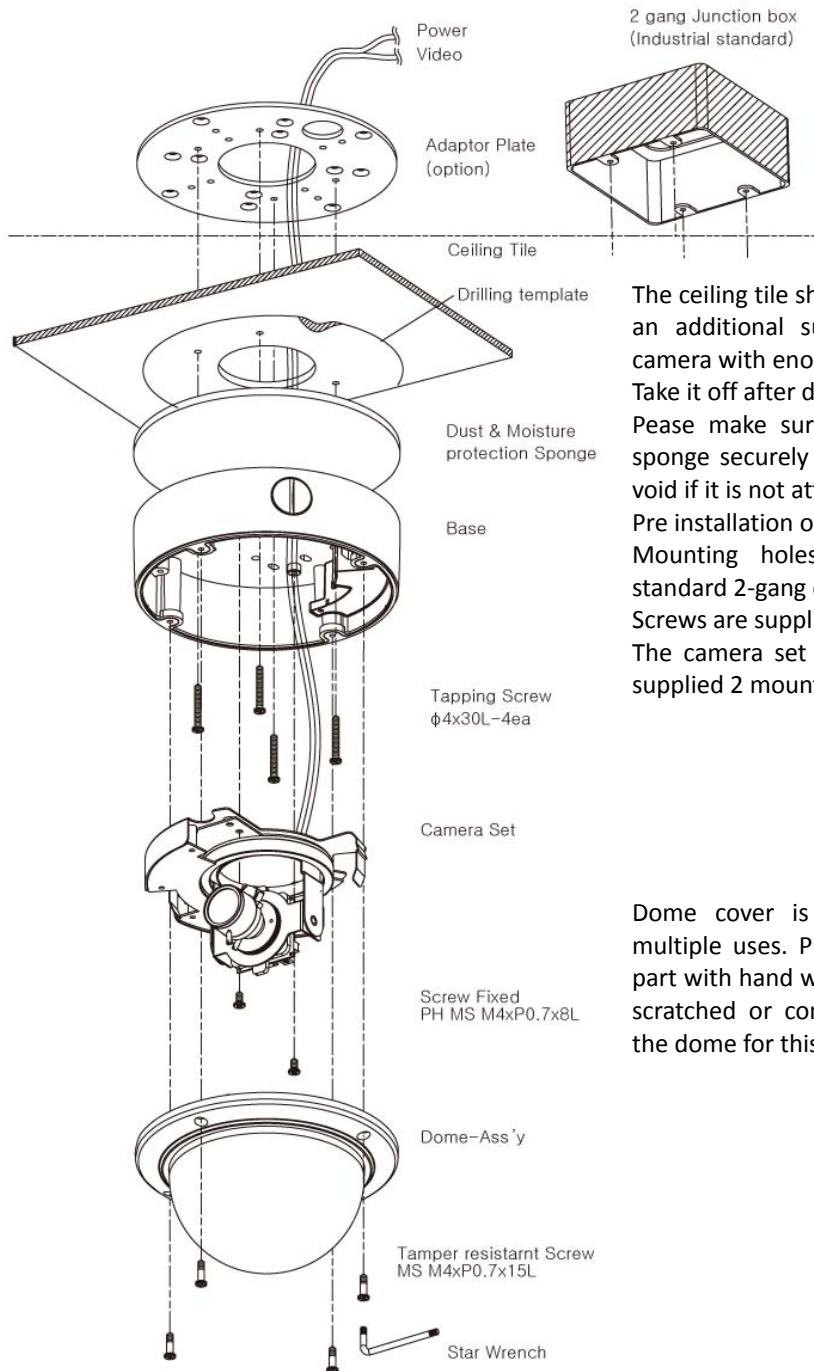

Power over Ethernet (PoE) Injector **PoE Mid-span** **PoE Office Switch**
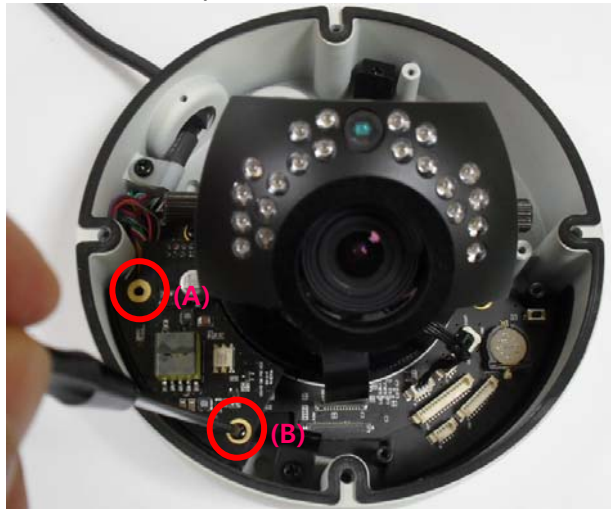
6. Installation

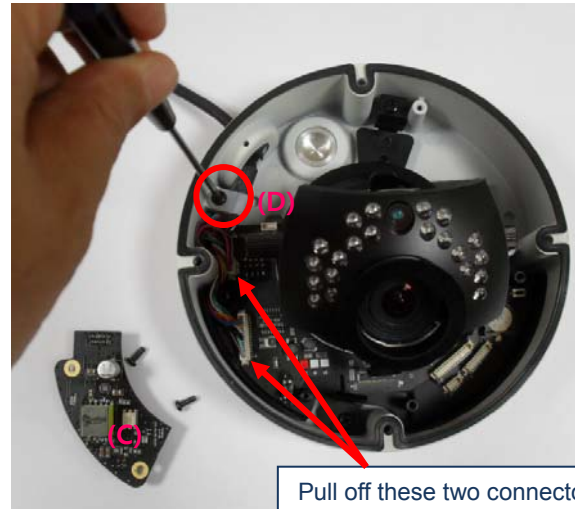## 6.1. Installation overview

The ceiling tile should be applied for only when there is an additional support available for it to hold the camera with enough strength after the installation.

Take it off after drilling the mounting hole on the guide.

Pease make sure to attach the Moisture protection sponge securely on the back of the base. Warranty is void if it is not attached properly.

Pre installation of the base is possible.

Mounting holes are compatible to the industry standard 2-gang electric junction box.

Screws are supplied in the package.

The camera set is separated from the base with the supplied 2 mounting screws.

Dome cover is externally revolved with hand for multiple uses. Press the dome and turn it to a clear part with hand when the existing part of the window is scratched or contaminated. No need to disassemble the dome for this job.

6.2. How to reposition the cable from the back to the side of base.

<Figure 1>

Pull off these two connectors

<Figure 2>

① Figure 1 shows factory default set up. The cable comes out to the side of base.

② Unscrew the two screws of (A) and (B) and disassemble the small PCB board (C) from the main board. (See Figure 2)

③ Unscrew the cable tie and the wire (Hanger) as in the figure above. ((D) in Figure 2)

④ Pull off the two connectors and let them out through the side hole.

⑤ Take off the Conduit cap on the bottom of the base with a coin and fix it on the side conduit hole.

⑥ Put the cable into the base through the bottom conduit hole and connect those two connectors to the same location from which they were taken off.

⑦ Fix the cable and the safety wire (Hanger) with cable tie and screw.

⑧ Assemble the small upper PCB board again as before.

6.3. How to adjust the Zoom/Focus.

6.3.1. Parts location

< a-1. 3.3~12mm DN >

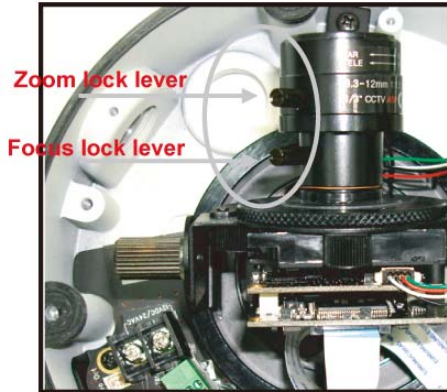< a-2. 7.5~50mm DN >

< a-3. 3.3~12mm IR >

6.3.2. Zoom/Focus adjustment

Zoom and Focus locking levers are tightened and positioned at top side so that they can be accessed by hand at factory.
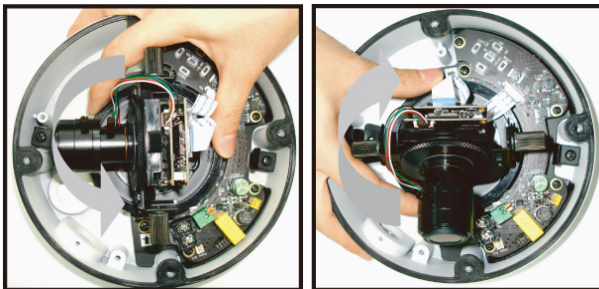

1. Please loosen the zoom/focus levers a little bit by turning them counter-clockwise with finger.
2. Move the lever left or right to adjust the zoom and focus.
3. Please lock them tightly after the adjustment by turning them clockwise with finger.

6.4. How to adjust the camera angle.
6.4.1. Panning 180°

· Angle adjustment either to the left direction or right direction within 180° is possible.

1. Hold the Pan locking ring with hand and loosen it by turning it counterclockwise as in the picture left.
2. Adjust the panning angle and lock the Pan locking ring by turning it clockwise as in the picture.

6.4.2. Tilt 90°
· Angle adjustment of up to maximum 90° downward is possible.

1. Hold the Tilt locking levers on both sides with hand and loosen it by turning it counter-clockwise as in the picture left.
2. Adjust the Tilt angle with hand and lock the Tilt locking lever by turning it clockwise as in the picture.

6.4.3. Rotation 360°

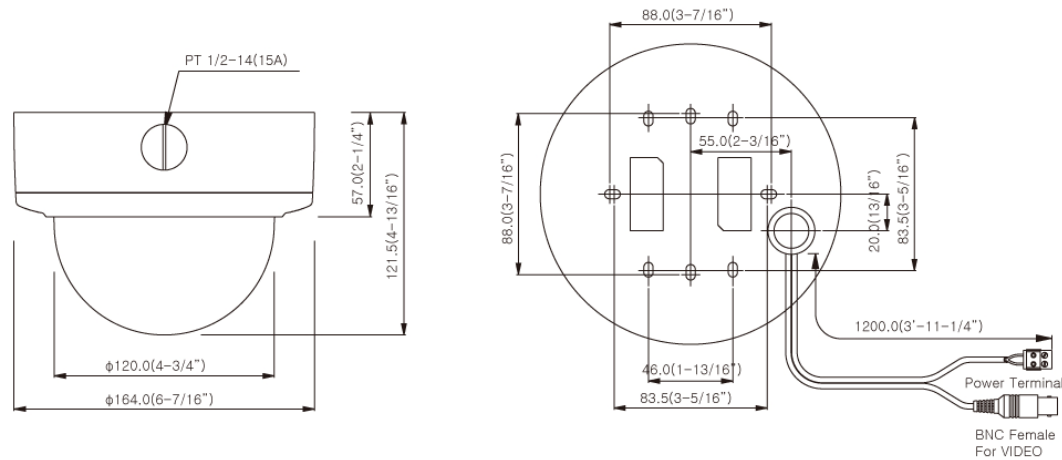- Grab the both ends of the Rotation handle as in the picture and adjust the angle to the direction you want.

- Angle adjustment either to the left direction or right direction within 360° is possible.

7. Dimension (mm)

8. Specification
8.1. VDA110SMi / VDA110SMi-IR

Classification		Specification	
		VDA110SMi	VDA110SMi-IR
General	CPU	32-bit ARM9 RISC CPU up to 533MHz, 32KB I/D-Cache, MMU	
	Video Buffer	16Mbyte Video Frame Buffer	
	Flash	16 Mbyte Flash Memory	
	SDRAM	256Mbyte	
Image Pickup	Image sensor	1.3 Megapixel 1/3" SONY progressive scan CMOS image sensor	
	Total Pixels	1384(H) x 1076(V) 1.49 Megapixel	
	Effective Pixels	1329(H) x 1049(V) 1.39 Megapixel	
	S/N Ratio	More than 50dB	
	Min. Illumination & IR Distance	0.5 Lux with DSSX2 (F1.2, 30IRE, AGC On)	0Lux (IR On) 30M (21 Built-in IR LED's)
	Day & Night	ICR	
	Lens Control	DC Iris	
	Lens	3.5~16mm Vari-focal Megapixel Lens	
Video	Video compression	H.264 baseline profile, Motion JPEG	
	Resolutions	Up to 1280 x 720	
	Frame rate	H.264 Up to 30fps with 1280x720	
		MJPEG up to 15 fps with VGA (Simultaneous stream with H.264) MJPEG Up to 30fps with 720P resolution (Single MJPEG stream)	
	Video streaming	Support multi stream with H.264, MJPEG	
		Adjustable frame rate	
		VBR/CBR in H.264	
	Pan/Tilt/Zoom	Digital PTZ	
	Image setting	Day & Night	
		Auto White Balance	
		Auto Exposure	
		Privacy Mask	
		Effect - Color, Sharpness, Mirror/V-Flip, etc.	

	Output	BNC x1, 1.0Vp-p, 75 ohm Composite Video, NTSC/PAL	
Audio (Option)	Audio streaming	Two-way, full duplex	
	Audio compression	G.711	
	Sample Rate	8KHZ	
	Data Rate	64Kbps	
	Audio input	Microphone input /1 x Line-In (Mono)	
	Audio output	Line output/ 1 x Line-Out (Mono)	
Network	Security	Password protection	
		User access log	
		HTTPS encryption	
	Supported protocol	HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DynDNS, NTP	
		RTSP, RTP, TCP, UDP, ICMP, DHCP	
System integration	Intelligent video	Motion detection up to 1280x720 with 32x24 blocks	
	Alarm trigger	Motion detection	
		External input/Normal Open/Close Type	
	Alarm events	File upload via ftp, e-mail	
		Notification via email, FTP and TCP	
		External output activation/Normal Open/Close Type	
	Video buffer	16MB pre-alarm and post-alarm	
	Recording	Save to Micro-SD card with event mode and continuous mode	
	Firmware upgrade	Remote upgrade via network	
	API	CGI Interface document	
		ActiveX Interface(ocx(dll) + document)	
etc	RESET Button	1 x Factory Reset Button	
Physical	Power Source	DC 12V/1.5A, PoE(Power over Ethernet): 802.3af	
	Power Consumption	Max. 5.5W	Max. 7.2W with IR On
	Net Weight	2000g Appr.(Camera Only)	
	LED's	Power, Network Connection	
	Dimension	164(Ø) x121.5(H)	
Environment	Operating Temperature	-25 degree~50 degree Celsius(-13F~122F)	
	Storage Temperature	-25 degree~60 degree Celsius(-13F~140F)	
Software	Included Software	NVR Lite (16 Channel), IP Installer (Windows only)	
Package	Package Contents	Network Camera, Use Manual, External Power Adaptor, Software CD	

8.2. VDA110SM3i / VDA110SM3i-IR

Classification		Specification	
		VDA110SM3i	VDA110SM3i-IR
General	CPU	32-bit ARM9 RISC CPU up to 533MHz, 32KB I/D-Cache, MMU	
	Video Buffer	16Mbyte Video Frame Buffer	
	Flash	16 Mbyte Flash Memory	
	SDRAM	256Mbyte	
Image Pickup	Image sensor	3.0 Megapixel 1/2.8" SONY progressive scan CMOS image sensor	
	Total Pixels	2144(H) x 1588(V) 3.4 Megapixel	
	Effective Pixels	2144(H) x 1561(V) 3.27 Megapixel	
	S/N Ratio	More than 52dB	

	Min. Illumination & IR Distance	1 Lux with DSSX2 (F1.2, 30IRE, AGC On)	0Lux (IR On) 30M (21 Built-in IR LED's)
	Day & Night	ICR	
	Lens Control	DC Iris	
	Lens	3.5~16mm Vari-focal Megapixel Lens	
Video	Video compression	H.264 baseline profile, Motion JPEG	
	Resolutions	Up to 1920 x 1080	
	Frame rate	H.264 Up to 15fps with 1920x1080	
		MJPEG up to 15 fps with VGA (Simultaneous stream with H.264)	
		MJPEG Up to 30fps with 720P resolution (Single MJPEG stream)	
	Video streaming	Support multi stream with H.264, MJPEG	
		Adjustable frame rate	
		VBR/CBR in H.264	
	Pan/Tilt/Zoom	Digital PTZ	
	Image setting	Day & Night	
		ATR (WDR)	
		Auto White Balance	
		Auto Exposure	
		Privacy Mask	
		Effect - Color, Sharpness, Mirror/V-Flip, etc.	
	Output	BNC x1, 1.0Vp-p, 75 ohm Composite Video, NTSC/PAL	
Audio (Option)	Audio streaming	Two-way, full duplex	
	Audio compression	G.711	
	Sample Rate	8KHZ	
	Data Rate	64Kbps	
	Audio input	Microphone input /1 x Line-In (Mono)	
	Audio output	Line output/ 1 x Line-Out (Mono)	
Network	Security	Password protection	
		User access log	
		HTTPS encryption	
	Supported protocol	HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DynDNS, NTP	
		RTSP, RTP, TCP, UDP, ICMP, DHCP	
System integration	Intelligent video	Motion detection up to 1920x1080 with 32x24 blocks	
	Alarm trigger	Motion detection	
		External input/Normal Open/Close Type	
	Alarm events	File upload via ftp, e-mail	
		Notification via email, FTP and TCP	
		External output activation/Normal Open/Close Type	
	Video buffer	16MB pre-alarm and post-alarm	
	Recording	Save to Micro-SD card with event mode and continuous mode	
	Firmware upgrade	Remote upgrade via network	
	API	CGI Interface document	
		ActiveX Interface(ocx(dll) + document)	
etc	RESET Button	1 x Factory Reset Button	
Physical	Power Source	DC 12V/1.5A, PoE(Power over Ethernet): 802.3af	
	Power Consumption	Max. 5.5W	Max. 7.2W with IR On

	Net Weight	2000g Appr.(Camera Only)
	LED's	Power, Network Connection
	Dimension	164(Ø) x121.5(H)
Environment	Operating Temperature	-25 degree~50 degree Celsius(-13F~122F)
	Storage Temperature	-25 degree~60 degree Celsius(-13F~140F)
Software	Included Software	NVR Lite (16 Channel), IP Installer (Windows only)
Package	Package Contents	Network Camera, Use Manual, External Power Adaptor, Software CD

8.3. VDA110EHi / VDA110EHi-IR

Classification		Specification	
		VDA110EHi	VDA110EHi-IR
General	CPU	32-bit ARM9 RISC CPU up to 533MHz, 32KB I/D-Cache, MMU	
	Video Buffer	16Mbyte Video Frame Buffer	
	Flash	16 Mbyte Flash Memory	
	SDRAM	256Mbyte	
Image Pickup	Image sensor	1/3" Sony 960H Ex-view HAD CCD II	
	Effective Pixels	NTSC : 976(H) x 494(V), PAL : 976(H) x 582(V)	
	H. Resolution	650TV Lines(Color)/ 700TV Lines(B/W)	
	Synchronizing system	Internal	
	Scanning system	NTSC : 525 Lines PAL : 625 Lines 2:1 Interlaced	
	S/N Ratio	More than 52dB (AGC Off)	
	Min. Illumination	0.1 Lux (Color), 0.01Lux (B/W)	0Lux (IR On)
	Shutter Speed	NTSC:1/60~1/100,000 sec. PAL:1/50~1/100,000 sec.	
	Gamma Correction	Standard γ = 0.45	
	Lens (Standard)	2.8-12mm Vari-focal DC Auto Iris lens	
Video	Video compression	H.264 baseline profile, Motion JPEG	
	Resolutions	Up to D1(NTSC:720X480, PAL:720X576)	
	Frame rate	H.264 Up to 30fps at D1	
		MJPEG Up to 30fps at D1	
	Video streaming	Support multi stream with H.264, MJPEG	
		Adjustable frame rate	
		VBR/CBR in H.264	
	Pan/Tilt/Zoom	Digital PTZ	
	Image setting	Day & Night	
		ATR (WDR)	
		Auto White Balance	
		Auto Exposure	
		Effect - Color, Sharpness, Mirror/V-Flip, etc.	
		BNC x1, 1.0Vp-p, 75 ohm Composite Video, NTSC/PAL	
		Privacy Mask	
		Effect - Color, Sharpness, Mirror/V-Flip, etc.	
	Output	BNC x1, 1.0Vp-p, 75 ohm Composite Video, NTSC/PAL	
Audio (Option)	Audio streaming	Two-way, full duplex	
	Audio compression	G.711	
	Sample Rate	8KHZ	
	Data Rate	64Kbps	

	Audio input	Microphone input /1 x Line-In (Mono)
	Audio output	Line output/ 1 x Line-Out (Mono)
Network	Security	Password protection
		User access log
		HTTPS encryption
	Supported protocol	HTTP, HTTPS, FTP, SMTP, UPnP, DNS, DynDNS, NTP
		RTSP, RTP, TCP, UDP, ICMP, DHCP
System integration	Intelligent video	Motion detection up to 1280x720 with 32x24 blocks
	Alarm trigger	Motion detection
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	Alarm events	File upload via ftp, e-mail
		Notification via email, FTP and TCP
	Video buffer	16MB pre-alarm and post-alarm
	Recording	Save to Micro SD card with event mode and continuous mode
	Firmware upgrade	Remote upgrade via network
	API	CGI Interface document
		ActiveX Interface(ocx(dll) + document)
Physical	RESET Button	1 x Factory Reset Button
	Power Source	DC 12V/1.5A, PoE(Power over Ethernet): 802.3af
	Power Consumption	Max. 5.5W / Max. 7.2W with IR On
	Net Weight	520g Appr.(Camera Only)
	LED's	Power, Network Connection
	Dimension	134(Ø) x91.7(H)
Environment	Operating Temperature	-25 degree~50 degree Celsius (-13F~122F)
	Storage Temperature	-25 degree~60 degree Celsius (-13F~140F)
Software	Included Software	NVR Lite (16 Channel), IP Installer (Windows Only)
Package	Package Contents	Network Camera, Use Manual, External Power Adaptor, Software CD

■*Specifications are subject to change without prior notice to enhance performance and stability*